

Notice of Allowability	Application No.	Applicant(s)	
	09/683,781	LI ET AL.	
	Examiner	Art Unit	
	Hoon Song	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to response filed on 8/30/04.
2. ☒ The allowed claim(s) is/are 1,2,4-8,12-16 and 19-25.
3. ☒ The drawings filed on 13 February 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Allowable Subject Matter

Claims 1-2, 4-8, 12-16 and 19-25 are allowed over prior art.

The following is an examiner's statement of reasons for allowance:

None of the prior art teaches or suggests a method of voltage modulation for CT imaging by steps of acquiring a set of cardiac signals having a plurality of triggering pulse, after each period of delay, energizing a high frequency electromagnetic energy source to a data acquisition voltage, after acquiring the set of imaging data, energizing the high frequency electromagnetic energy source to a non-data acquisition voltage until the period of delay after a next triggering pulse as claimed in independent claim 1.

Claims 2 and 4-6 are allowed by virtue of their dependency.

None of the prior art teaches or suggests a radiation emitting imaging system having a control configured to determine a primary data acquisition stage and a secondary data acquisition stage, energize a high frequency electromagnetic energy projection source to a first voltage during the primary data acquisition stage to acquire primary imaging data and energize the high frequency electromagnetic energy projection source to a second voltage different from the first voltage during the secondary data acquisition stage to acquire secondary imaging data, and reconstruct an image of the scan subject from imaging data acquired during each data acquisition stage as claimed in independent claim 7.

Claims 8 and 12-14 are allowed by virtue of their dependency.

None of the prior art teaches or suggests a computer readable storage medium having a computer program stored thereon and representing a set of instructions that when executed by a computer causes the computer to determine from a set of cardiac motion signals a number of primary data acquisition stages and a number of secondary acquisition stages, transmit a first voltage modulation signal to a voltage source configured to energize an x-ray projection source used to project x-rays to the scan subject for data acquisition , the first voltage modulation signal configured to energize the voltage source to a first voltage for each primary data acquisition stage, acquire a set of imaging data and transmit a second voltage modulation signal to the voltage source, the second voltage modulation signal being configured to energize the voltage source to a second voltage for each secondary acquisition stage as claimed in independent claim 15.

Claims 16 and 19-21 are allowed by virtue of their dependency.

None of the prior art teaches or suggests a method of cardiac CT imaging by steps of determining a primary acquisition period and a secondary acquisition period, energizing an x-ray source to a default, non-zero-voltage energizing the x-ray source to a primary voltage that exceeds the default voltage during CT data acquisition for the primary acquisition period and returning the x-ray source to the default voltage during CT data acquisition for the secondary acquisition period as claimed in independent claim 22.

Claim 23 is allowed by virtue of their dependency.

None of the prior art teaches or suggests a radiation emitting imaging system having a control configured to apply a first voltage to the high frequency electromagnetic energy projection source, acquiring imaging data of a heart with the high frequency electromagnetic energy projection source at the first voltage, thereafter apply a second voltage to the high frequency electromagnetic energy projection source and reconstruct an image of the scan subject for multiple phases of each cardiac cycle as claimed in independent claim 24.

Claims 25-26 are allowed by virtue of their dependency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HKS

9/2/04
HKS


DAVID V. BRUCE
PRIMARY EXAMINER